TRAIN 2 - from Gare du MIDIH to Open Source Digital Manufacturing Platforms

MIDIH
MANUFACTURING · INDUSTRY
DIGITAL · INNOVATION · HUBS

MIDIH Final Event – Session 2

The MIDIH Project
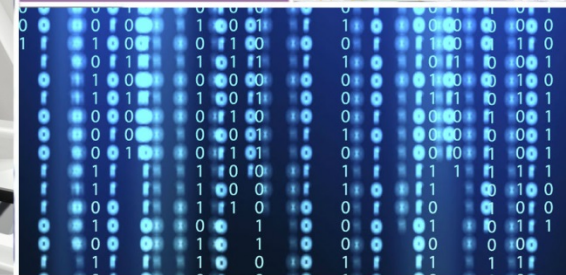
#DigitiseEU

MIDIH Final Event
Digital Manufacturing Platforms

Rositsa Georgieva, Programme Officer

Technologies & Systems for Digitising Industry, DG CONNECT/A2, European Commission

- B2C platforms are championed by US and China

**"B2B platforms are the next battle
Europe cannot afford to lose"**

- EU is **leader in manufacturing** and it is of strategic importance for the future of the European economy

- **5 out of the 9 best factories in the world**, as identified by the World Economic Forum **are in Europe**

✓ Schneider Electric (France)

✓ Bayer, Division Pharmaceuticals (Italy)

✓ Johnson & Johnson DePuy Synthes (Ireland)

✓ Phoenix Contact (Germany)

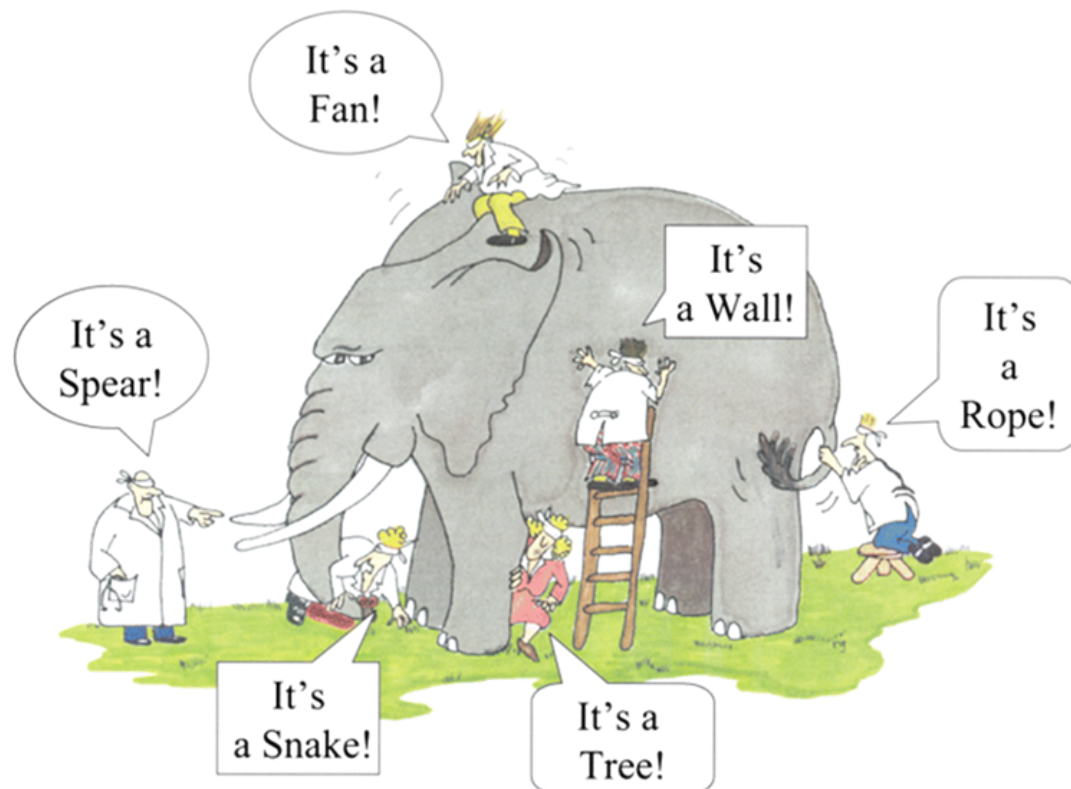✓ Procter & Gamble (Czech Republic)

In China, but European:

✓ Siemens Industrial Automation Products (Chengdu, China)

✓ Bosch Automotive (Wuxi, China)

https://www.weforum.org/press/2018/09/europe-asia-lead-the-way-to-the-factories-of-the-future/

X *A place or opportunity for public discussion*
e.g. European Platform of National Initiatives

✓ *An operating system that integrates different technologies and various applications and services*

X *Online platforms in the consumer world*
e.g. Facebook, Nest, Android

✓ *Industrial platforms in the business world*

It's a
Fan!

It's
a Wall!

It's
a
Rope!

It's a
Spear!

It's
a Snake!

It's a
Tree!

European Commission

Roles of digital industrial platforms

Network/Marketplace/Community
- Explicit connections between users
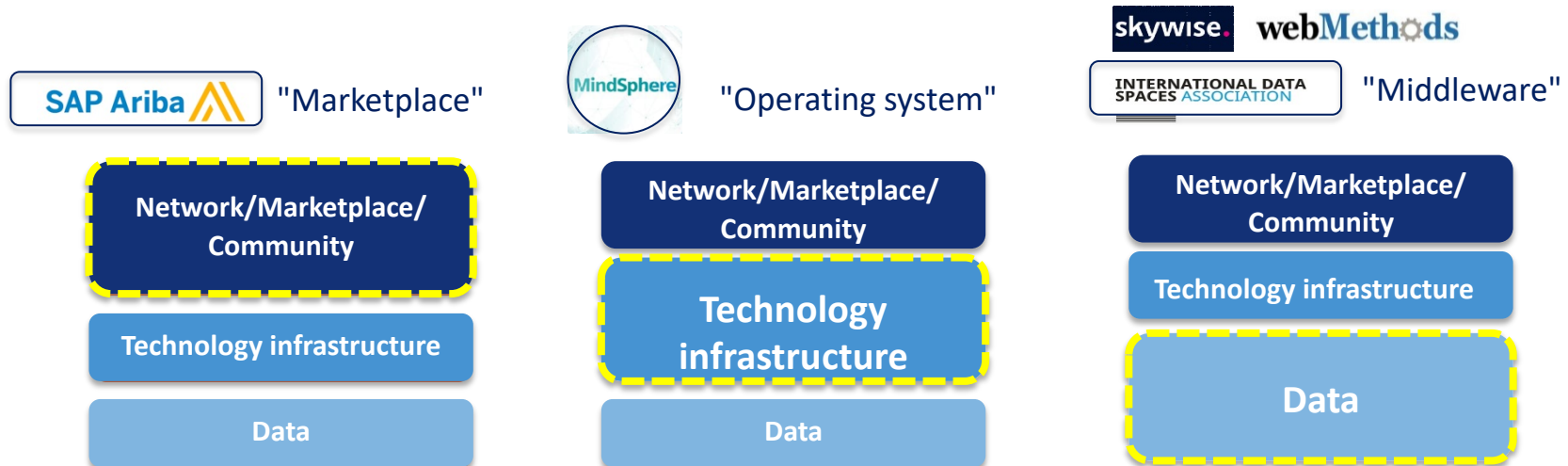- Network is key value

Technology infrastructure
- Complementary applications
- Development platforms

Data
- Unlock data
- Integration

Examples of how different platforms fill in roles in different ways and to varying degrees

SAP Ariba "Marketplace"

Network/Marketplace/Community
Technology infrastructure
Data

MindSphere "Operating system"

Network/Marketplace/Community
Technology infrastructure
Data

skywise. **webMethods** **INTERNATIONAL DATA SPACES ASSOCIATION** "Middleware"

Network/Marketplace/Community
Technology infrastructure
Data

FIWARE : Components for platform building

Shaping digitalisation at a global level

EUROPE SHOULD LEAD IN B2B PLATFORMS

- ✓ Platforms are markets / **OPENNESS** grows the market
- ✓ **COLLABORATIVE, SIMPLE & SCALABLE** ecosystems
- ✓ Move with the **SPEED** of digital not the manufacturing industry
- ✓ **TO MAKE IT WORK WE NEED TO WORK TOGETHER!**

European Commission

Shaping digitalisation at a global level

HOWEVER, EUROPE NEEDS TO...

⇒ **Shape** the B2B platform landscape

⇒ Respect **European values**

⇒ Generate **rich ecosystems**

⇒ **Address** European **fragmentation**

⇒ Set up **interoperability framework** that best serves EU industry.

⇒ Have an **integrated approach to** deal with multiple **"languages"**

European Commission

2016

- Collaborative manufacturing and logistics plus factory automation
- Multi-sided markets
- 53 M€, 10 Research and Innovation Actions
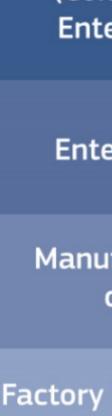
FOF-11-2016 - Digital automation

2018

- Consolidation from 2016 and cooperation with national initiatives
- Agile value networks; Zero-defects manufacturing
- DEI Focus Area: Platforms & Pilots
- 48 M€, 3 Innovation Actions

2019

- Further Consolidation
- Human factor; Sustainable value networks
- Market picking up b2b platforms:
  → Increased attention for user requirements
  → Federation of platforms
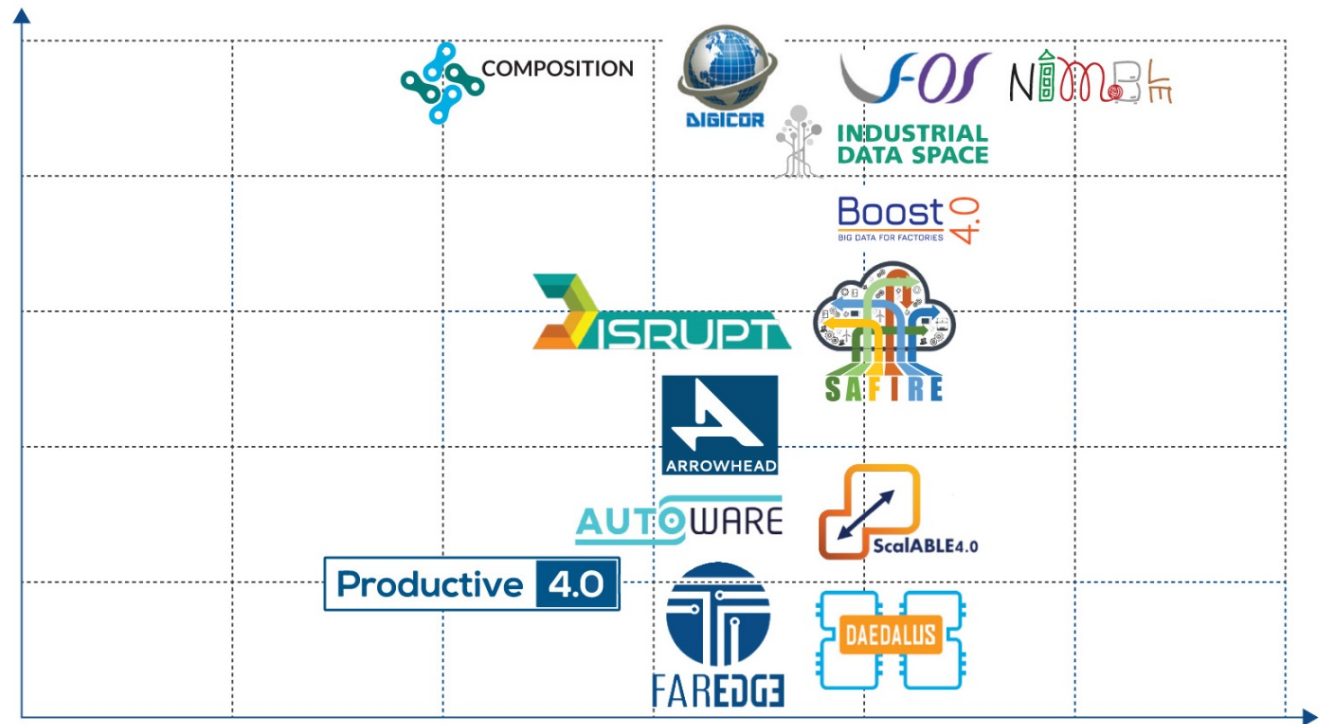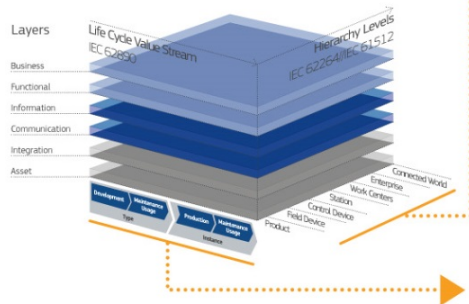- 47 M€, Innovation Actions + add CSA

DT-ICT-07-2018-2019 - Digital Manufacturing Platforms for Connected Smart Factories

European Commission

Mapping EU platform projects on the RAMI 4.0 reference architecture model

Hierarchy levels defined by RAMI

- (Connected) Enterprises
- Enterprise
- Manufacturing cells
- Factory Equipment/ Field Device

COMPOSITION

DIGICOR

F-OS

NIMBLE

INDUSTRIAL DATA SPACE

Boost 4.0 — BIG DATA FOR FACTORIES

DISRUPT

SAFIRE

ARROWHEAD

AUTOWARE

ScalABLE4.0

Productive 4.0

FAREDGE

DAEDALUS

Life cycle value stream defined by RAMI

Design/ Development	Production engineering of manufacturing equipment/ technologies	Production of manufacturing equipment/ technologies	Integration/ configuration of manufacturing systems	Use phase of manufacturing systems (producing products)	After-use phase of manufacturing systems

Layers — Life Cycle Value Stream IEC 62890 — Hierarchy Levels IEC 62264/IEC 61512

Business, Functional, Information, Communication, Integration, Asset

CONNECTED FACTORIES

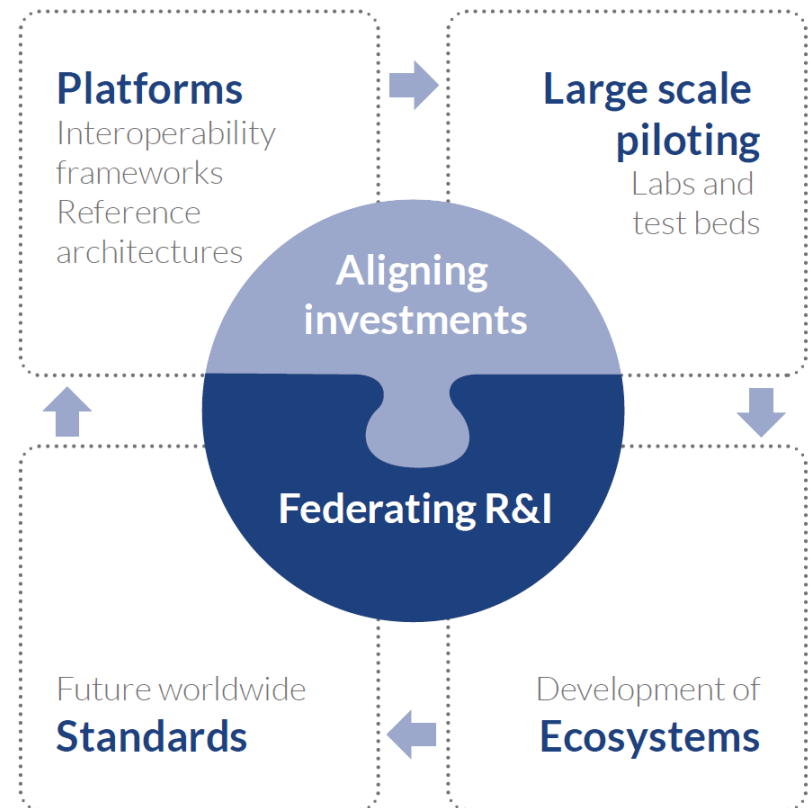Note: This includes a portfolio of more than €100 million EU investment across different projects

Platform is not only technology!

- Interoperability
- Consolidation of standards
- Trusted Business models
- Ecosystem – speed up and scale up adoption, SMEs

Instrumental for the roll-out of business models that address the needs of every business in any industrial sector

Platforms
Interoperability frameworks
Reference architectures

Large scale piloting
Labs and test beds

Aligning investments

Federating R&I

Future worldwide **Standards**

Development of **Ecosystems**

- Digital manufacturing platform with **impact**

- Development of the platform at the very beginning of the project, **not at the end**. **All aspects taken into account!**

- Large scale federating project. **Reduce fragmentation**.

- **Credibility**

  - Clear strategy how the platform will leverage impact. (i.e. how it will support the competitiveness of companies using the platform, how it will address SME needs, …)

  - Address the most important barriers: interoperability, data governance, SME friendliness, …

  - Steps and phases towards a sustainable ecosystem

  - Real world demand and how the project achieve results

- **Strong monitoring** of the impact of the project, not only at the end of it

Objective: At the end of the project the platform should be prepared to enter the market

- Clear entity representing the interests of the overall platform

- How you will make it sustainable

But…

- We have had bad experiences with spin-offs from projects. Need evidence!

- The efforts assigned to the new partner should be enough and consistent with the impact expected

- Planning to ensure the platform operation after the lifetime of the project

Each partner should perform its **role in the project**

- Well-balanced consortium … make the most of the project!

- Who is (are) representing the interest of the platform? How are they collaborating to achieve this goal?

- End users are key for the project pilots and use cases

- Collaboration among **platform projects and CSAs** to increase the impact of this initiative

- Closer pre-commercial collaboration with other **B2B platform providers**

- Intensify collaboration among **European actors** to win the B2B battle race (commercial platforms providers, European initiatives such as IDS, FIWARE, …)

- Strength of working together to shape the future of the manufacturing industry - **Horizon Europe**

Not enough data available for reuse

Lack of European data processing & storage solutions
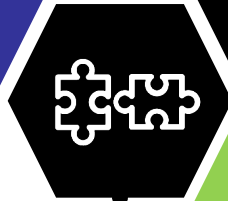
Absence of comprehensive data governance approaches

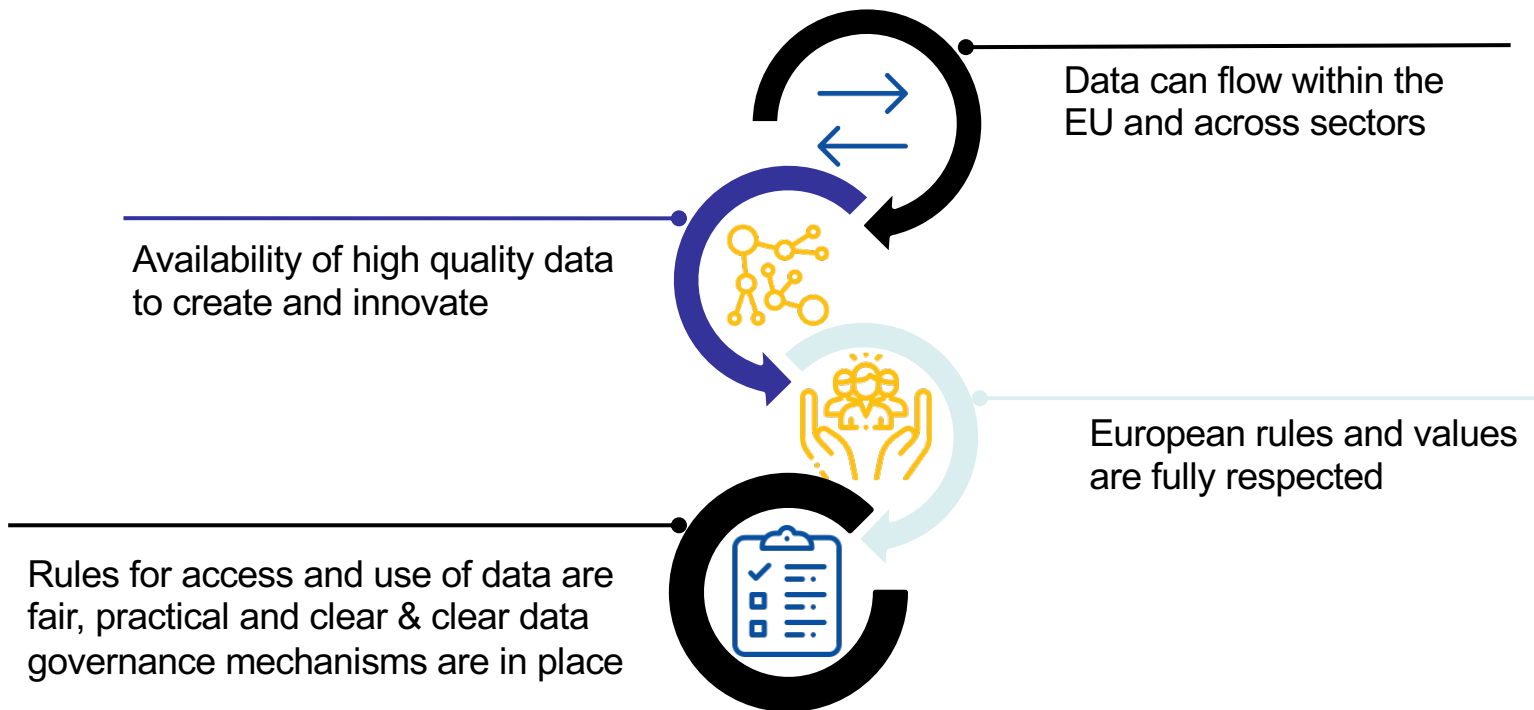Skills shortage and low data literacy

No real user empowerment

Fragmentation of the single market

European Commission

A common European data space, a single market for data

Data can flow within the EU and across sectors

Availability of high quality data to create and innovate

European rules and values are fully respected

Rules for access and use of data are fair, practical and clear & clear data governance mechanisms are in place

Common European Data Spaces

Rich pool of data (varying degree of accessibility)

Free flow of data across sectors and countries

Full respect of GDPR

Horizontal framework for data governance and data access

Health

Industrial & Manufacturing

Agriculture

Finance

Mobility

Green Deal

Energy

Public Administration

Skills

—Technical tools for data pooling and sharing
—Standards & interoperability (technical, semantic)

— Sectoral Data Governance (contracts, licenses, access rights, usage rights)
— IT capacity, including cloud storage, processing and services

Thank you!

Contacts

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Follow the latest progress and get involved

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